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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,642	06/27/2003	Victor T. Escobedo	200207746-1	8321
22879	7590	04/05/2005	EXAMINER	
HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400			DO, AN H	
			ART UNIT	PAPER NUMBER
			2853	

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/608,642

Applicant(s)

ESCOBEDO ET AL.

Examiner

An H. Do

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-48 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

The Response to Restriction/Election Requirement filed on 04 January 2005 has been acknowledged.

#### ***Election/Restrictions***

1. Applicant's election without traverse of Species B and asserting that all claims 1-48 readable on this species in the reply filed on 04 January 2005 is acknowledged. This is found persuasive and therefore, the Restriction/Election Requirement mailed on 13 December 2004 has been withdrawn.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-8, 10-16, 25, 26, 28-42, 44, 45 and 48 are rejected under 35 U.S.C. 102(b) as being anticipated by Burr et al (US 5,781,212).

Burr et al disclose in Figures 1-5 the following claimed features:

Regarding claims 1, 33 and 34, a printhead (print head 10 consists of individual head arrays 30K, 30M, 30Y, 30C) for printing on a print media (column 1, lines 16-17), the printhead (10) comprising:

-a column of nozzles (each individual head arrays 30K, 30M, 30Y, 30C having a plurality of nozzles) oriented at an angle to an axis of relative movement between the printhead and the print media (horizontal axis, Figure 4); and

a print axis (horizontal axis, Figure 4) oriented substantially parallel to the axis of relative movement between the printhead (10) and the print media,

wherein at least some of the nozzles are variably aligned to the print axis (Figure 4, each horizontal axis can be drawn across a plurality of nozzles).

Regarding claims 2, wherein the at least some of the nozzles are intersected by the print axis (Figure 4, each horizontal axis can be drawn across a plurality of nozzles).

Regarding claims 3, 35 and 36, wherein one of the at least some of the nozzles is offset a first distance from the print axis and another of the at least some of the nozzles is offset a second distance from the print axis, wherein the second distance differs from the first distance (Figure 4 shows a plurality of nozzles aligned at an angle and hence, the offset distances of the nozzles are varied).

Regarding claims 4, 37 and 38, wherein one of the at least some of the nozzles is offset from the print axis in a first direction and another of the at least some of the nozzles is offset from the print axis in a second direction opposite the first direction (Figure 4 shows a plurality of nozzles aligned at an angle and hence, the offset distances of the nozzles are varied).

Regarding claim 5, wherein the at least some of the nozzles includes adjacent nozzles of the column of nozzles (Figure 4 shows nozzles are adjacent).

Regarding claim 6, wherein the column of nozzles includes multiple columns of nozzles (Figure 4 shows a plurality of columns of nozzles), and wherein the at least some of the nozzles includes at least one nozzle of each of the columns of nozzles (Figure 4 shows each column having at least one nozzle).

Regarding claim 7, wherein the angle is an acute angle (Figure 4 shows the nozzles are oriented at angle of less than 90 degrees).

Regarding claim 8, wherein the printhead (10) is a non-scanning printhead (page-width array PWA).

Regarding claim 10, a printhead (print head 10 consists of individual head arrays 30K, 30M, 30Y, 30C) for printing on a print media (column 1, lines 16-17), the printhead (10) comprising:

- a plurality of nozzles (each individual head arrays 30K, 30M, 30Y, 30C having a plurality of nozzles) divided into subgroups of nozzles (two or more nozzles in each of head arrays 30K, 30M, 30Y, 30C ) and including at least one column of nozzles oriented at an angle to an axis of relative movement between the printhead and the print media (horizontal axis, Figure 4); and

- a plurality of print axes (horizontal axis, Figure 4) oriented substantially parallel to the axis of relative movement between the printhead (10) and the print media,

wherein nozzles within each one of the subgroups are variably aligned to one of the print axes (Figure 4 shows each horizontal axis can be drawn across a plurality of nozzles).

Regarding claim 11, wherein nozzles within each one of the subgroups are intersected by one of the print axes (Figure 4 shows each horizontal axis can be drawn across each one of subgroups of nozzles).

Regarding claim 12, wherein one of the nozzles within one of the subgroups is offset a first distance from one of the print axes and another of the nozzles within the

one of the subgroups is offset a second distance from the one of the print axes, wherein the second distance differs from the first distance (Figure 4 shows a plurality of nozzles aligned at an angle and hence, the offset distances of the nozzles are varied).

Regarding claim 13, wherein one of the nozzles within one of the subgroups is offset from one of the print axes in a first direction and another of the nozzles within the one of the subgroups is offset from the one of the print axes in a second direction opposite the first direction (Figure 4 shows a plurality of nozzles aligned at an angle and hence, the offset distances of the nozzles are varied).

Regarding claim 14, wherein at least one of the subgroups of nozzles includes multiple nozzles of the at least one column of nozzles (Figure 4 shows each subgroup of head array 30C having at least one column and multiple nozzles).

Regarding claim 15, wherein at least one of the subgroups of nozzles includes adjacent nozzles of the at least one column of nozzles (Figure 4 shows each subgroup of head array 30C having at least one column and multiple adjacent nozzles).

Regarding claim 16, wherein the at least one column of nozzles includes a first column of nozzles and a second column of nozzles spaced from and oriented substantially parallel to the first column of nozzles (columns of nozzles within subgroup head array 30C), and wherein at least one of the subgroups of nozzles includes at least one nozzle of the first column of nozzles and at least one nozzle of the second column of nozzles (Figure 4 shows a plurality of nozzles within head array 30C can be arranged in multiple columns and each subgroup is defined by having one nozzle from first column and another from second column).

Regarding claim 25, wherein the angle is an acute angle (Figure 4 shows the nozzles are oriented at angle of less than 90 degrees).

Regarding claim 26, wherein the printhead (10) is a non-scanning printhead (page-width array).

Regarding claims 28, 39 and 40, a printhead arrangement (Figure 4, print head 10 consists of individual head arrays 30K, 30M, 30Y, 30C) for printing on a print media (column 1, lines 16-17) comprising:

- a first printhead (head array 30C) including a first plurality of nozzles (head array 30C having a plurality of nozzles); and

- a second printhead (head array 30Y) adjacent the first print head (head array 30C) and including a second plurality of nozzles (head array 30Y having a plurality of nozzles);

wherein the first plurality of nozzles (head array 30C having a plurality of nozzles) of the first printhead (head array 30C) and the second plurality of nozzles (head array 30Y having a plurality of nozzles) of the second printhead (head array 30Y) each include at least one column of nozzles (each of head arrays 30C, 30Y having at least one column of nozzles) oriented at an angle to an axis of relative movement between the printhead arrangement and the print media (horizontal axis, Figure 4), and

wherein at least one nozzle of the first plurality of nozzles (one nozzle of head array 30C) and at least one nozzle of the second plurality of nozzles (one nozzle of head array 30Y) is included in a subgroup of nozzles (at least two or more nozzles of each of head arrays 30C, 30Y) each variably aligned to one of a plurality of print axes

(horizontal axis, Figure 4) oriented substantially parallel to the axis of relative movement between the printhead arrangement and the print media (Figure 4, each horizontal axis can be drawn across a plurality of nozzles).

Regarding claim 29, wherein nozzles within the subgroup of nozzles are intersected by the one of the print axes (Figure 4, each horizontal axis can be drawn across a plurality of nozzles).

Regarding claims 30, 41 and 42, wherein one of the nozzles within the subgroup of nozzles is offset a first distance from the one of the print axes and another of the nozzles within the subgroup of nozzles is offset a second distance from the one of the print axes, wherein the second distance differs from the first distance (Figure 4 shows a plurality of nozzles aligned at an angle and hence, the offset distances of the nozzles are varied).

Regarding claims 31, 44, 45 and 48, wherein one of the nozzles within the subgroup of nozzles is offset from the one of the print axes in a first direction and another of the nozzles within the subgroup of nozzles is offset from the one of the print axes in a second direction opposite the first direction (Figure 4 shows a plurality of nozzles aligned at an angle and hence, the offset distances of the nozzles are varied).

Regarding claim 32, wherein the angle is an acute angle (Figure 4 shows the nozzles are oriented at angle of less than 90 degrees).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:



Art Unit: 2853

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 9 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burr et al (US 5,781,212) in view of Hermanson (US 5,581,284).

Burr et al disclose the claimed invention except for reciting the printhead is a scanning printhead.

Hermanson teaches the printhead can be a scanning printhead (column 6, lines 47-49).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a scanning printhead, as taught by Hermanson into Burr et al, for the purpose of printing across the print medium.

6. Claims 17-24, 43, 46 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burr et al (US 5,781,212) in view of Ikemoto et al (US 6,793,319).

Burr et al do not disclose the controlling of nozzle ejection and dots formation.

Ikemoto et al teach in Figures 5-11 the controlling of nozzle ejection with different nozzle firing selections and the dots formation having dots overlapped (Figures 21-26).

It would have been further obvious to one having ordinary skill in the art at the time the invention was made to include the controlling of nozzle ejection and dots formation, as taught by Ikemoto Jr. et al into Burr et al, for the purpose of preventing quality deteriorating quality of print result.

**Contact Information**

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to An H. Do whose telephone number is 571-272-2143. The examiner can normally be reached on Monday-Friday (Flexible).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on 571-272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



An H. Do  
April 1, 2005